A.D. 1891. April 23. Nº 6994.
BRIERLEY'S Complete Specification.

183 BRITISH (1 SHEET)
B 6994
1891
165-86
Confectionary.
257
210

Figure 1.

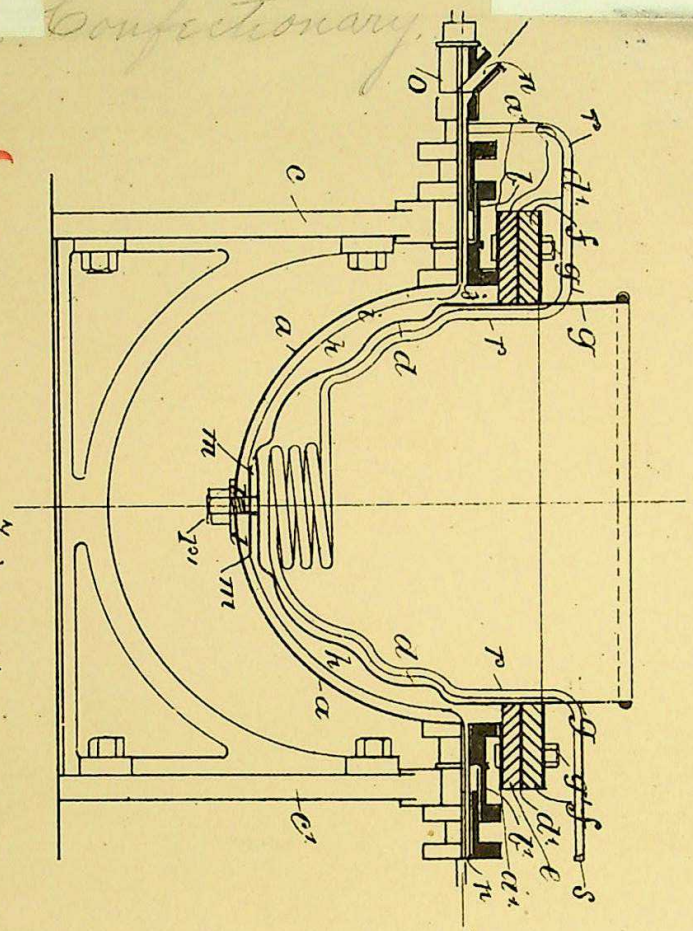
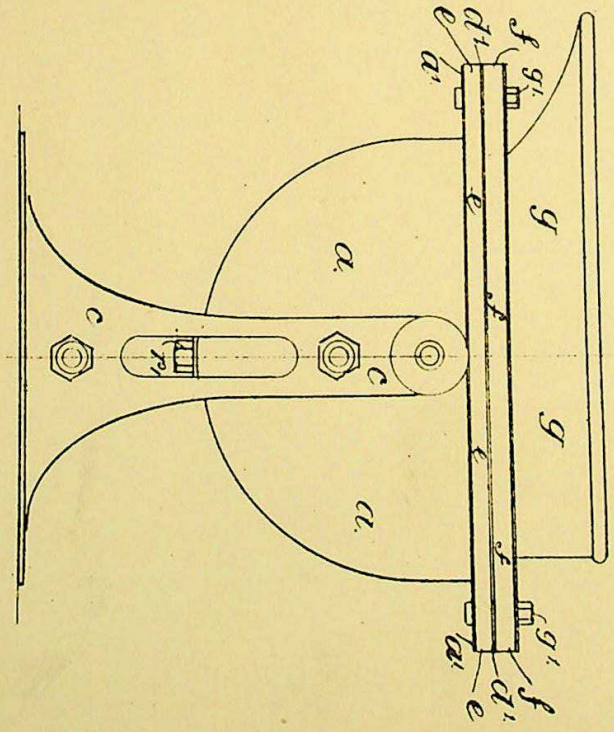


Figure 2.



[This Drawing is a reproduction of the Original on a reduced scale]

86

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Malby & Sons, Photo-Litho.

127 SUGAR & SALT
Confectionery.
257/210

N° 6994 A.D. 1891

Date of Application, 23rd Apr, 1891
Complete Specification Left, 20th Aug., 1891—Accepted, 3rd Oct., 1891

PROVISIONAL SPECIFICATION.

Improvements in and connected with the Manufacture of Confections.

I WILLIAM BRIERLEY of The Borough Brass Works Rochdale in the County of Lancaster Brass Founder do hereby declare the nature of this invention to be as follows :—

This invention relates to the manufacture of and apparatus for boiling or cooking solutions or compounds of sugar glucose or other ingredients used for the manufacture of sweetmeats or confections which are known in the trade as boiled goods.

It is well known to persons engaged in the confectionery industry that the sugar undergoes two boiling operations first in a steam jacketed pan or steam pan and secondly in open pans on open fires in order to obtain the proper consistency of the sugar and the requisite heat to attain such consistency.

It is of vital importance that the compound be heated to a high temperature particularly so when the water or moisture is evaporated therefrom in order that the same may quickly assume a mucilaginous state or attain the proper consistency so that when cooled or converted into the congealed state may be hard and of good colour these desirable qualities being necessary so that the manufactured confections may not become affected for a long period by atmospheric influences such as heat or moisture and may not become adhesive or objectionable to manipulate or handle during transport.

The sole object and purpose of this my invention therefore is to provide an apparatus capable of withstanding and operating with steam of high temperature and means whereby the sugar may be heated or the boiling effected in one and the same pan and consequently by such means the contents in the pan may be raised to a high temperature.

Within a circular or other conveniently shaped vessel or shell having a plain or even surface and supported by means of trunnions resting in suitable bearings on standards about the axes of which it is free to move or turn I place the copper or boiling pan of smaller diameter than the shell having a flange or annular rim the surface of the pan being indented or corrugated such corrugated form being an essential element in the carrying out of my invention as by such form I am enabled to obtain a large area of heating surface at the same time combining great strength the annular rim is allowed to rest on the edge of the shell thus a cavity or space is formed around the pan with which cavity a communication is effected with a boiler generating steam at high temperature by means of connecting pipes an outlet orifice also being provided leading from the cavity to a suitable steam trap. I also convey from the boiler a tube terminating within the cavity arranged to pass around the pan in any convenient manner the said tube may terminate with a perforated piece which I term a "rose" which may be a plate or plates or spray tubes or pieces whichever arrangement be employed the continuation of the tube from the boiler or the terminating spray pieces plate or plates the surface or surfaces presented or opposite to the surface of the pan being provided with a number or series of apertures or perforations.

The operation of this invention is as follows.

I admit or allow steam to pass from the boiler to the cavity which steam circulates around the pan and the perforated spray plate or plates but when the boiling of the contents has reached what I may term the critical or crucial point,

[*Price* 8*d*.]

that is when the moisture or water has been evaporated therefrom the temperature and supply of steam to the cavity may be augmented by admitting steam through the heated spray or rose the consequence is that dry steam is directed against the pan the temperature of the contents of the pan being immediately raised and quickly converted into the mucilaginous state or consistency so requisite in order to attain the most beneficial results as hereinbefore referred to.

Dated this 22nd day of April 1891.

J. H. BUTTERWORTH,
Representing the Applicant.

COMPLETE SPECIFICATION.

Improvements in and connected with the Manufacture of Confections.

I WILLIAM BRIERLEY of The Borough Brass Works Rochdale in the County of Lancaster Brass Founder do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to apparatus for boiling solutions or compounds of sugar, glucose, and other ingredients used for the manufacture of sweetmeats or confections which are known in the trade as boiled goods.

It is well known to persons engaged in the confectionery industry that the sugar undergoes two boiling operations, first, in a steam jacketed pan or steam pan, and secondly, in open pans on open fires in order to obtain the proper consistency of the sugar and the requisite heat to attain such consistency. It is of vital importance that the solution should be heated to a high temperature particularly so when the water or moisture is evaporated therefrom in order that the same may quickly assume the mucilaginous state or attain the proper consistency so that when cooled or converted into the congealed state may be hard and of good colour these desirable qualities being necessary so that the manufactured confections may not become affected by atmospheric influences and may not become adhesive or objectionable to manipulate or handle (which high temperature is now attained and accomplished by the aid of open fires or secondary operation herein before referred to).

The object and purpose of this my invention is to provide an apparatus or means capable of conducting the boiling operation in one pan without the aid of open fires and thus to effect a saving of labour which I accomplish by means of a steam-jacketed pan as now used but capable of operating with steam of high pressure being simply a jacketed pan of stronger construction than hitherto used but in conjunction with devices or arrangement by which means the temperature of the contents of the pan may be increased at the proper period that is when the water is evaporated from the solution or may be at the will of the attendant in order to accelerate the boiling thereof and to obtain the most beneficial results.

In order that a clear understanding may be had as to the manner of carrying my invention into effect I have hereto annexed a sheet of drawings which sheet fully illustrates the details of my said invention and marked with letters of reference similar letters referring to like parts in the figures therein shown.

Fig. 1, is a sectional front elevation of my invention.

Fig. 2, is an end elevation of Fig. 1.

Within a circular or other shaped vessel *a* of copper having an even surface and provided with trunnions *b* b^1 braised in one piece with the vessel and loosely mounted in bearings provided in standards so as to be free to turn about the axis of the trunnions *b* b^1 as required when the boiling is effected or when it is desired to pour the contents of the pan on to the cooling slab. I place a corrugated pan or copper of smaller diameter than the vessel *a*, which form of pan is essential in carrying out the main object of my invention *viz.* strength to resist steam of high

pressures and in order to obtain a comparatively greater heating surface than would be the case with a pan having a plain or even surface and of equal diameter, the annular rim d^1 of which pan is adapted to seat on a metal ring e which I term a packing ring which ring is seated on an annular rim or flange a^1 of the outer vessel, at the upper part or surface of the flange or rim d^1 of the pan is provided a packing ring f upon which is seated the rim or flanged portion of the curb g, the curb and the annular rim a^1—between which are interposed the packing rings—are secured together by means of bolts g^1, and between which rings and flanges cement is interposed. By the arrangement of attaching the pan d and the outer vessel at their flanges in conjunction with the formation of the trunnions in one piece with the body of the vessel a the use of soft metal or "solder" in connection with joints or rivet holes is dispensed with consequently danger or fracture is obviated which may occur at the joints due to the employment of steam of high temperature and pressure in order to accomplish the boiling.

Around the pan a cavity or space h is formed from which cavity extends a tube i or auxiliary steam supply pipe through an orifice j which tube may be connected to a steam generating vessel or boiler, the tube i terminates in the cavity l under a perforated plate or rose m the plate being braised to or with the pan.

The pan d and the outer vessel are connected together at their lower extremities by means of a bolt and plate r^1 in order to strengthen the pan when subjected to steam pressure. The perforated surface of the rose is presented or opposite to the underside of the pan, if desired a perforated coil may be used instead of the perforated plate in that case the tube i would terminate with a coil which may be of a form to accommodate the shape of the pan.

I also pass a coil r into the interior of the pan through which steam or heated media may be passed and consequently through the solution contained therein.

The operation of my invention is as follows.

Steam is allowed to pass through the orifice n through the annular space j thence into the cavity h and through the coil r which may be controlled by means of suitable cocks or taps on the pipe leading into orifice n, and the coil r, steam is also allowed to pass through the tube i and to be directed against the pan when the boiling is to be completed or accelerated, the exhaust steam from the coil is passed out at s and the exhaust steam from the cavity and the auxiliary supply tube or rose is passed out through the hollow trunnion b^1, at the exhaust extremity of each I provide a suitable escape valve I also provide a suitable cover or hood over the pan in order to carry off the fumes arising from the boiling solution.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is.

1. In combination the corrugated pan d, the coil r, orifices j and n, pipe i, rose m, and outer vessel a by means of which combination of parts steam may be admitted into or through the interior of the pan, and around the pan, either separately or both at the same time also an auxiliary supply of steam may be admitted into the cavity and directed against the corrugated pan as and for the purposes herein fully set forth and described.

2. The auxiliary or accelerating steam supply pipe i, passing through an annular orifice and terminating with the rose m situate within the cavity h as and for the purposes herein fully specified.

3. The corrugated pan d substantially as and for the purposes herein specified.

4. The outer vessel a having hollow trunnions b b^1 formed or braised solid with the body of the vessel as and for the purposes herein specified.

5. The combination of the corrugated pan d, the pipe i with the rose m, and the outer vessel a having trunnions formed solid or in one piece with the said vessel as by such arrangement or combination of pan and vessel as herein described and as shewn in the annexed drawings the use or application of soft metal known as

"solder" is obviated and thus the melting thereof at the joints due to high temperatures of steam is avoided for the purposes herein set forth.

Dated this 19th day of August A.D. 1891.

WILLIAM BRIERLEY.

J. H. Butterworth,
Representing the Applicant.

London: Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1891.